

WHAT IS CLAIMED IS:

1. A fixing method for fixing a member to be fixed that is inserted into a shaft member, the fixing method comprising the steps of:

forming an annular groove in an outer circumference of the shaft member;

inserting the member to be fixed into the shaft member until the member to be fixed contacts a step portion provided in the shaft member;

inserting a locking member into the shaft member until the locking member contacts the member to be fixed; and

caulking the locking member to the shaft member such that one end of the locking member is brought into press contact with the member to be fixed and an inner circumference portion of the other end of the locking member comes into contact with the annular groove.

2. The fixing method according to claim 1, wherein the step of the caulking comprises applying a pressing force toward an inner circumference side from an outer circumference side of an end portion of the locking member by using an annular die having a tapered inner circumferential surface.

3. A fixing apparatus for fixing a member to be fixed that is inserted into a shaft member, the fixing apparatus comprising:

an annular groove formed in an outer circumference of the shaft member;

a step portion provided in the shaft member, the bracket portion contacting the member to be fixed;

a cylindrical locking member that is inserted into the shaft member, the locking member being caulked and fixed to the shaft member such that one end of the locking member is brought into press contact with the member to be fixed and an inner circumference portion of the other end of the locking member comes into contact with the annular groove.

4. The fixing apparatus according to claim 3, wherein the annular groove has a wedge-shaped cross section.

5. The fixing apparatus according to claim 3, wherein the locking member is a cylindrical body having a collar in an end portion that contacts the member to be fixed.